utge in these and in other respects, we still say that all these benefits may be very dearly purchased, and would be so, if by any sudden infliction, for we call it an *infliction*, of this new machinery, a reduction is to be made in the wages and somewhat stinted comforts of the great bulk of the working men.

There is a common proverb to this effect, that we may "buy gold too dear," and this of a truth is what is said we are doing, literally as well as metaphorically. But our business is with the buying of the benefits of this machinery, and these, we are afraid, it will be made clear are only to be had at a cost which is expressed by the fable of the frogs,—the mason may exclaim to the capitalist, and to certain sections of the public, who pelt, or propose to pelt them, with these stones, these machine-wrought stones, "Gentlemen, it may be fun (or profit) to you, but it is death to us."

Yes; we use the words "*capitalist*" and "*certain sections of the public*," because we would limit our admission of its advantages (thus: the patentees or inventors, we will undertake to say, will not reap any large or adequate proportion; if they do, then will the exception prevail and not the rule,—and the large bulk of the public will have to calculate the re-action of loss, as well as the direct loss, which they will encounter by a large measure of injury inflicted on their customers, the working-men; first in their reduced means of consumption, and next in the pauperized dependence which it may enforce.

We will not travel over the common argument of those who defend machinery and its applications: we know well that in the long run a certain balance of advantage is derivable from it—that it is in the nature of these things, like water, to find their level—that demand and supply adjust themselves. But this levelling and this adjustment is not brought about till many other *things* are drowned in the torrent, or jerked off the beam of adjustment; and these *things* are not inanimate, senseless, soulless objects, but *precious human beings*, and we must talk of matters in which their lives and souls are interested, not as we discuss the axioms of a mathematical process, or solve a problem — we have no right to do so. Capital is not, with all its keenness of vision, the most acute calculator of risks and profits — it not infrequently makes gross blunders, and "runs amuck" for its own interests as well as prejudicially to the community. To be sure, the community become the wiser for such experiments; but then there are the *little things*, the little *precious things*, that are lost and destroyed in the process—the bodies and souls of men, and women, and children—the physical and corporeal deterioration and suffering, and the still worse demoralization that attends the rude and violent trial of these experiments —these issues, are incalculably serious and fearful. Who thrusts his hand in the fire to convince himself of its heat? And have we not played sufficiently long this game of experiments, this leaving of waters to find their own level? or must we, like the desperate gamester, seek to retrieve our losses by still more desperate throws? Who wants this machinery, let us ask, at this period? Is it not a "carrying our coals to Newcastle: our blankets to the Indies?"

But while we are mooting all this serious matter, does it not suggest itself to us to ask how we are acting towards the ingenious and so far meritorious inventors of this machine?—are we not uttering a language prejudicial to their interests, and to the interest of those who have embarked in the speculation? and this we have no right to do. How, if our words shall take effect, are we to compensate them for the probable profit of which we may have thereby deprived them?—we say probable profit, *for* it is by no means certain, judging from common experience, that profit will attend it. We do not deny the truth of their calculations; assuming, therefore, that profits are to be made, founded on these calculations, how, we say, shall we be able to compensate the parties for any damage they may suffer by our words? We trust we shall be able to acquit ourselves in this respect, and also to throw out hints in a proper spirit, and for practical ends; but as our present paper has extended over the limit we had set ourselves, we will defer to a [illegible] number [illegible] to the present [illegible] [illegible] [illegible] [illegible]

extracts from the circulars, that may serve to explain more as regards the character and the power of these machines than any thing we have written in the foregoing.

In describing the "Patent Stone-cutting Machine," the following has reference:—

"The length of train which can be passed through the machine in ten hours, reckoning 2 feet 3 inches per minute, is 1325 feet, which, at 3 feet 3 inches broad, gives 4306 feet of surface dressing. Then suppose the sides are cut the whole depth—say 12 inches—they give 2650 feet more, which, without reckoning that the ends can be dressed at the same time, gives 6956 superficial feet: but to make allowance for the spaces between the stones, for setting tools, and other losses and delays, take off a half of this, and we have still 3500 feet left for a day's work, or equal to the average proportion of above 300 ordinary masons. This quantity done by hand-labour will cost 4d. per foot, or about 58*l.* for a day's work; while making every allowance for the expense of day labourers, loading and unloading, tear and wear of machinery, &c., it cannot, by the new method, cost above one-fifth of that sum, besides being much more accurately done.

"The following is an example which may be palpable to the mind of every reader:—Suppose the double line of foot pavement from the cross to the head of Washington-street, in our city of Glasgow, contains 120,000 feet of hewing, the saving on the cost of preparing this quantity would be 1,000*l.*, reckoning at 2d. per foot, and it would be all polished, a process which has at present to be performed at an expense of shoe leather to the good citizens, which, if counted fairly, would astonish them."

The following refer to the "PATENT IRON-MASON."

"In the 4th part of the 1st vol. of the Magazine, there were given a plate and description of the first and principal one of a series of patent machines for cutting, dressing, and preparing stone-work. The annexed plate contains drawings of some of the others. The first was for preparing plain and parallel blocks for walls or solid buildings; these are for cutting out columns, either whole or in pieces, with the mouldings on them, also grindstones and other articles of a cylindrical form. The plans of the machinery for fluting columns will be given at a future period.

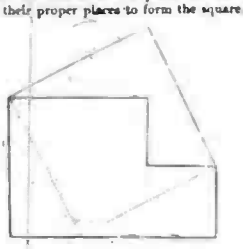
"It will be obvious on comparing the several machines, that the same principle is adopted in all; viz. the employing of wheels with tools fixed in them to cut the stone, the parallel work being produced by moving the stones forward in carriages running on a horizontal plane, and the cylindrical being produced by causing the stones to revolve on an axis while under the operation of the tools. The greatest difficulty in the way of dressing building stones by machinery was presumed to be the preserving the corners and edges unbroken and unhurt. This difficulty, however, has been effectually obviated by giving all the cutting-wheels a slight inclination, or, in other words, by giving the plane, in which the points of the tools revolve, a slight dip where the tools first strike into the stone, so that in passing away off the stones the tools are elevated so as not to touch them. It may be noticed that the use of a cylinder with tools attached to it is not new. A rude attempt to dress a flat surface of stone with one was made near to Edinburgh about fourteen years ago, but it failed. Its application in the present form for dressing columns, together with all the arrangements of the machinery for that purpose, are claimed by the present patentees.

"The time occupied in dressing both sides and the periphery of a grindstone 5 feet in diameter, and of 10 inches thickness, will be 15 minutes; and if to this be added 30 minutes employed in setting the stone preparatory to dressing the first side, and for afterwards turning and setting it for the second, there are 45 minutes, at which rate 13 grindstones will be produced in 10 hours—and reckoning that the tools will stand as they do in the machine for plain work in Mr. Neilson's quarry, Woodside, 2 sets will serve for the 10 hours. 30 minutes are amply sufficient for shifting a set of tools. The attendance of one active man and a boy, with the assistance of a small little crane, and a duplicate carriage to load while the other is in use, will be sufficient to keep the machine fully at work, and superintend the steam-engine also."

PROBLEMS.

TO THE EDITOR OF THE BUILDER.

SIR,—I beg to offer the following solution of the problem given in No. II. of THE BUILDER. The figure there shewn is not, I presume, quite accurate, having apparently been formed by the compo[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] figure thus obtained in the space which would be left, a square would be formed, only one cut having been employed; but supposing the figure was intended for a square, with a smaller square, equal to one-fourth the area of the larger placed at one corner, the mode shewn in the accompanying figure will perform what is required. The dotted lines shew the cuts, the strong lines the original piece of carpet, and the thin lines the pieces cut off and placed in their proper places to form the square.



The lady who proposed this problem is evidently an ingenious person. Perhaps she or some of your correspondents would explain the way to proceed in a case where the carpet was of the form shewn in

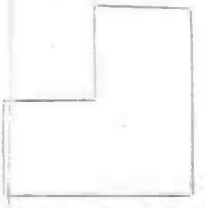
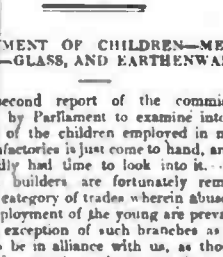


fig. 2, namely, a square with one-fourth removed.

I remain, Sir,
Your obedient servant,
E. MARES.

SIR,—My father has given me a large square field, which I wish to divide in the manner following:—I shall retain one quarter of it for a cottage and garden, the remainder I want dividing into four fields all of a shape and all of a size. A plan of the above will probably not be denied to

Your obedient servant,
W. B. S.



EMPLOYMENT OF CHILDREN—METAL WARES—GLASS, AND EARTHENWARE.

THE second report of the commission appointed by Parliament to examine into the condition of the children employed in mines and manufactories is just come to hand, and we have hardly had time to look into it. It is true that builders are fortunately removed from the category of trades wherein abuses as to the employment of the young are prevalent, with the exception of such branches as may be said to be in alliance with us, as those of brick and general earthenware, the metal-works, and glass-works; these we have chosen to select from, and we are sure the great body of the building fraternity will join with us in sympathising with the sufferers—nay, not alone this, but in doing all in their power in their proper places and in a proper way to alleviate their sufferings. Lord Ashley's motion on Tuesday evening last, in the House of Commons, is, however, the most important feature of promise in this respect; we invite attention to it, and cordially express for ourselves and our class our grateful thanks to that estimable nobleman for his exertions in behalf [illegible]